Presented to:

60th Annual NDIA Fuze Conference

Army AMRDEC S&T Strategy

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

10 May 2017

Presented by:

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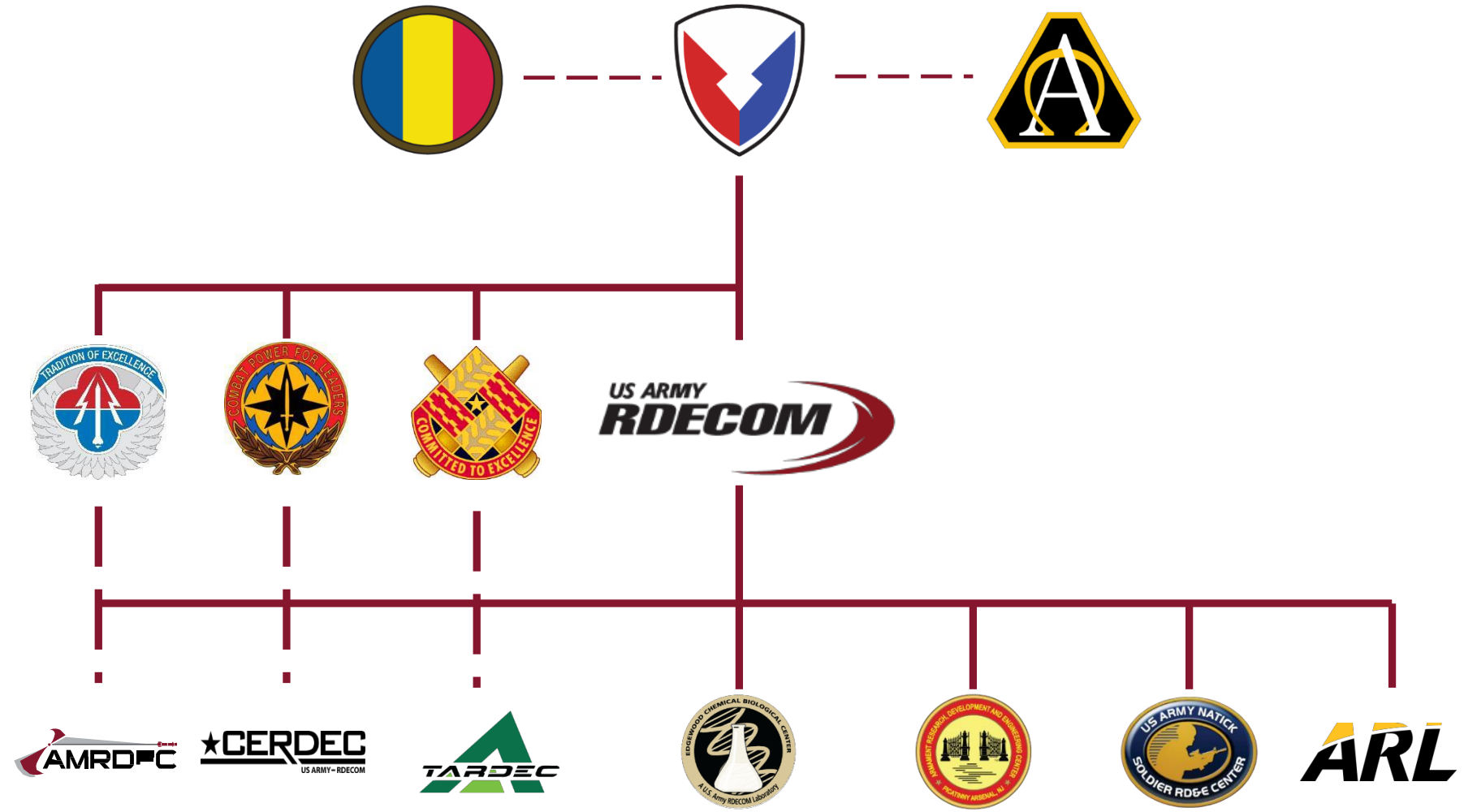
U.S. Army Aviation and Missile Research, Development, and Engineering Center

Reporting Structure



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AMRDEC Overview

Aviation Development Directorate

- Aviation S&T supports both the current helicopter and future rotorcraft fleets in improving survivability, performance, and affordability
- Current efforts are focused on platforms, power, survivability, vehicle management, and operations support and sustainment
- Future efforts are focused on Future Vertical Lift (FVL)
- Joint Multi-Role (JMR) Technology Demonstrator (TD)
- Focus on Transition to PEO Aviation

Aviation Engineering Directorate

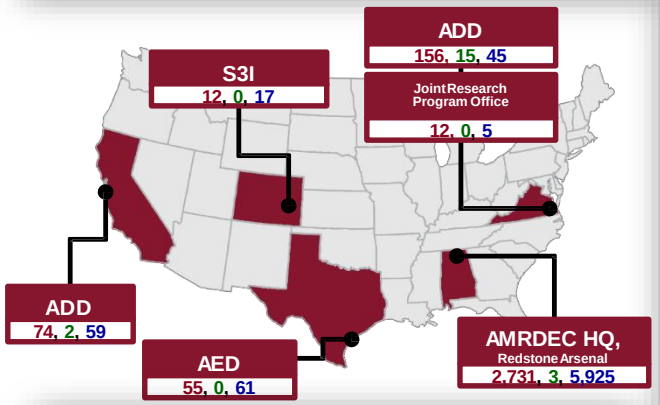
- Delegated Airworthiness (AW) Authority
- Systems Engineering
- Aeromechanics
- Propulsion
- Structures and Materials
- Mission Equipment
- Maintenance/Sustainment Engineering
- Foreign Military AW Authority Recognitions

Engineering Directorate

- Systems Engineering
- Test and Evaluation
- Production Engineering
- Product Assurance
- Configuration Management
- Prototype Integration Facility / Rapid Response
- Logistics Engineering
- Industrial Base Assurance
- Life Cycle Cost Reduction
- Manufacturing Technology
- Reliability and Maintainability Engineering
- Quality Engineering
- Quality Management

Weapons Development & Integration Directorate

- Life Cycle Management for DoD missile technology
- Conducts research, exploratory and advanced development, technology demonstration and provide engineering and scientific expertise in all aspects of weapon system design, development, improvement and integration for the Army
- Lead Army agent in the execution of the Missile Science and Technology Enterprise

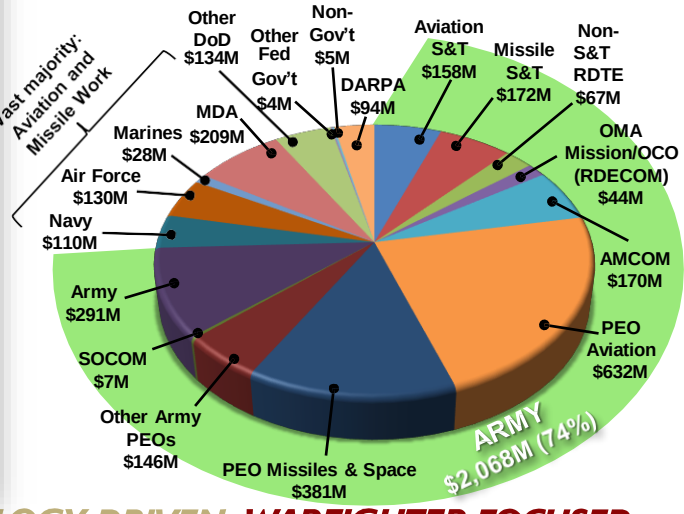


Systems Simulation, Software, & Integration Directorate

- Hardware-In-the-Loop (HWIL) Models and Simulations for Aviation and Missile Systems
- Conduct Performance and Effectiveness Evaluations for Aviation and Missile Systems
- Design and Develop Virtual Prototyping Facilities for User Evaluations of Aviation and Missile Applications
- Define and Develop Modeling and Simulation Methods and Technologies for DoD Applications
- Computer Hardware/Software Technology
- Independent Verification and Validation (IV&V)
- Aviation Flight Safety/Airworthiness Software Assessments
- Software Development and Sustainment
- Information Assurance/Cyber Security
- Interoperability Engineering and Test (IET)
- Software Fielding/New Equipment Training
- Configuration and Data Management
- Software Quality Engineering

Who We Support

FY15 ($2,782M)



FY15 Strength = 9,176			Current S&E Personnel	
81.0% S&E	Civilian	3,040	PhD	6%
	Military	20	MS	44%
	Contractor	6,112	BS	100%

Average Age: 46.5 yrs

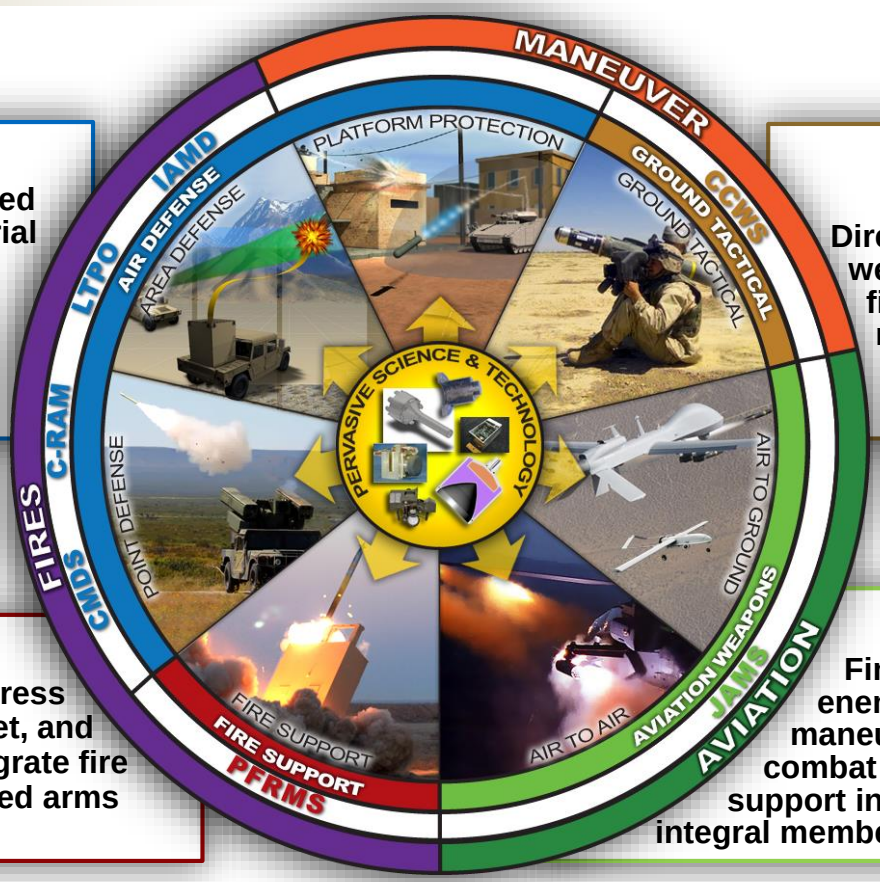
TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Missile S&T Capability Areas

Air Defense

Protect the force and selected geopolitical assets from aerial attack, missile attack and surveillance

- Point Defense
- Area Defense
- Platform Protection



Ground Tactical (Close Combat)

Direct fire and precision weapons, supported by indirect fire, air-delivered fires, and nonlethal engagement means to decide the outcome of battles and engagements

Fire Support

Destroy, neutralize, or suppress the enemy by cannon, rocket, and missile fire and to help integrate fire support assets into combined arms operations

Aviation Weapons

Find, fix, and destroy the enemy through fire and maneuver; and to provide combat, combat service and combat service support in coordinated operations as an integral member of the combined arms team

Pervasive Technology

Proponent for 6.2 programs that are deemed too immature to transition to one of the four capability areas, are pervasive across two or more of the capability areas, or are core competencies

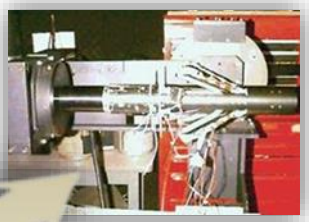
AMRDEC Technology Area Leads

CYBER

SENSOR

MISSILE ELECTRONICS

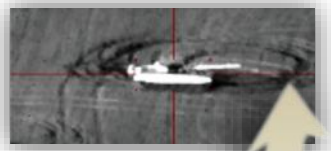
GUIDANCE



LETHALITY

RADAR

DATALINK & COMMUNICATION



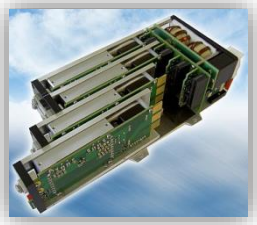
PROPULSION

LAUNCHER

RELIABILITY/MAINTAINABILITY

AFFORDABILITY / MANUFACTURING TECHNOLOGY

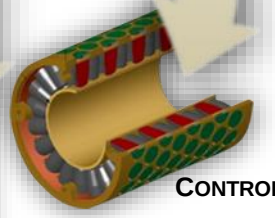
MATERIALS & STRUCTURES



POWER

WARHEAD/FUZE

NAVIGATION SYSTEMS



CONTROL SYSTEMS

AERODYNAMICS

MODEL & SIMULATION

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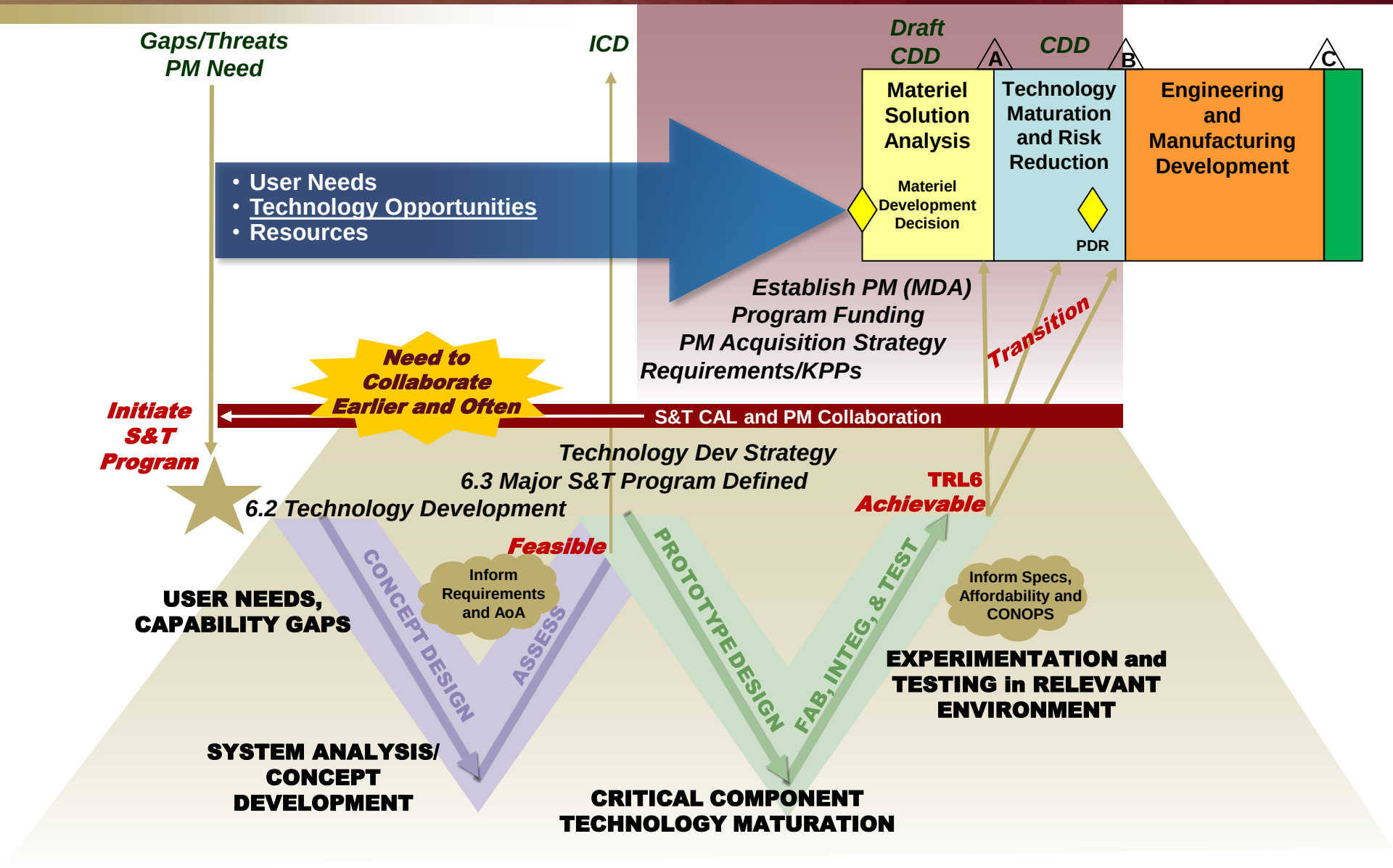
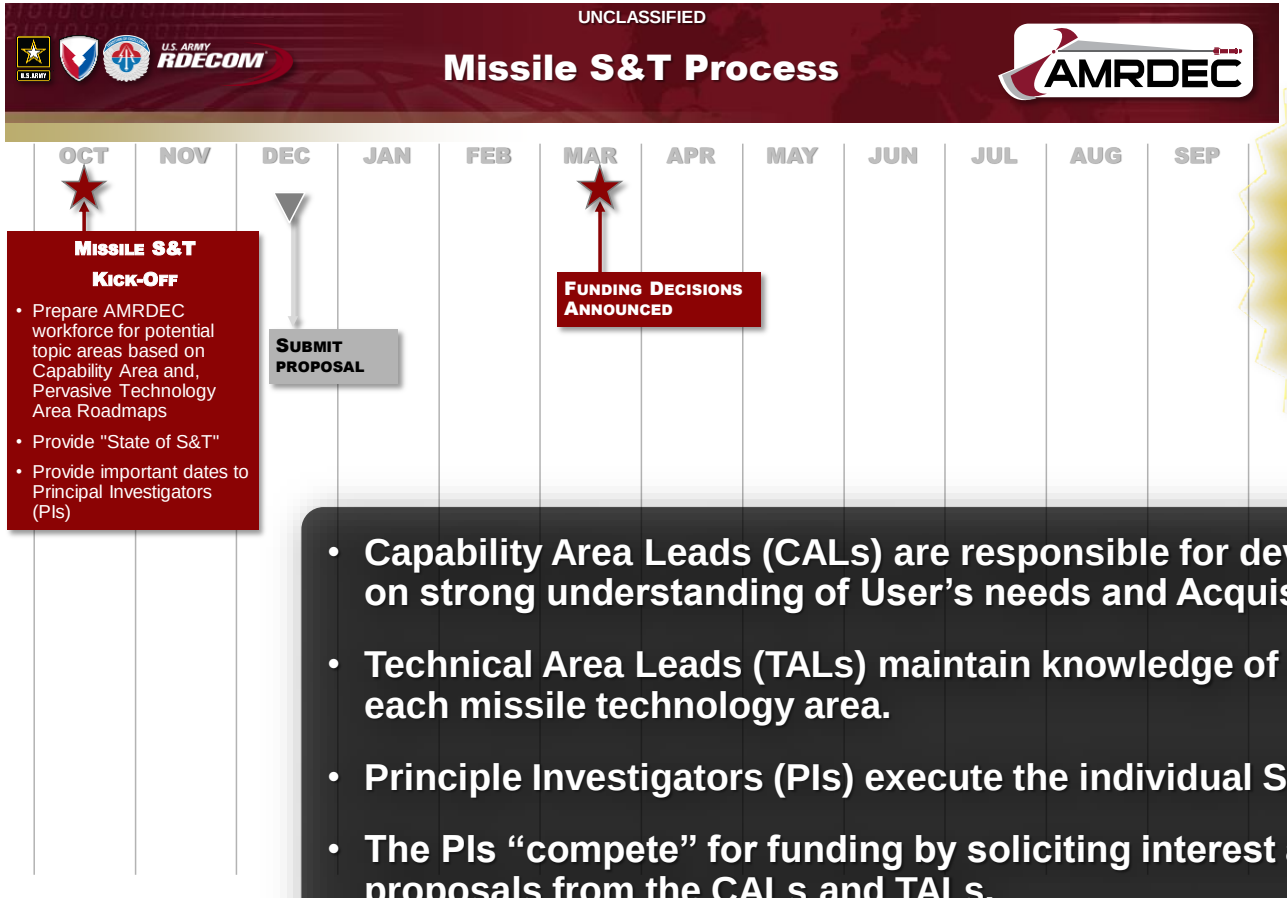
AMRDEC S&T Initiation and Transition to PEO MS



Missile S&T Investment Process

PROPOSED TIMELINE



INDUSTRY & ACADEMIA INTERACTS WITH CALS AND TALS

- Capability Area Leads (CALs) are responsible for developing S&T roadmaps based on strong understanding of User's needs and Acquisition partner's requirements.
- Technical Area Leads (TALs) maintain knowledge of the current state of the art of each missile technology area.
- Principle Investigators (PIs) execute the individual S&T efforts.
- The PIs "compete" for funding by soliciting interest and endorsement in their proposals from the CALs and TALs.
- Each proposal is assessed for technical feasibility and for applicability to needs/gaps prior to receiving funding or being added to the S&T roadmap.

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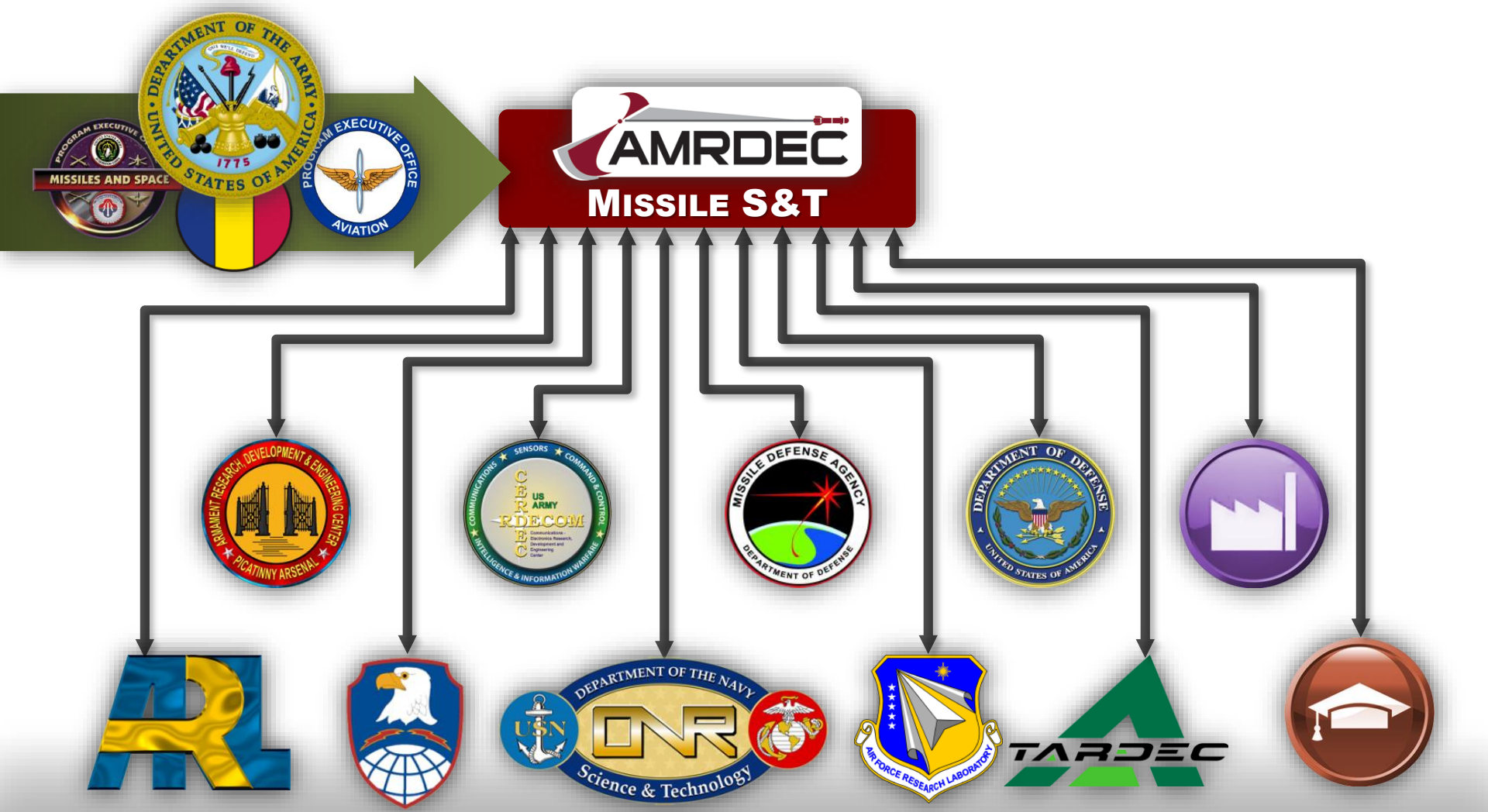
Missile S&T Collaboration



AMRDEC Missile S&T Enterprise

CAPABILITY AREA	CURRENT/POM (FY19-23)*			FUTURE (FY24 -50)	
GROUND TACTICAL	LMAMS ENHANCEMENTS	PRECISION SHOULDER LAUNCHED MISSILE (PSLM)	NEXT GENERATION CLOSE COMBAT MISSILE(S)	SINGLE MULTI-MISSION ATTACK MISSILE (SMAM)	MULTIPLE SIMULTANEOUS ENGAGEMENT TECHNOLOGIES (MSET)
AIR DEFENSE	cUAS AT THE TACTICAL EDGE	LOW-COST EXTENDED-RANGE AIR DEFENSE (LOWER AD)	DIGITAL ARRAY RADAR TESTBED (DART)	MANEUVER AIR DEFENSE TECHNOLOGIES	NEXT GENERATION LOWER TIER MISSILE TECHNOLOGIES
FIRE SUPPORT	TAIL CONTROLLED GMLRS (TCG) TECH INSERTION	LOW-COST TACTICAL EXTENDED RANGE MISSILE (LC-TERM)	LAND-BASED ANTI-SHIP MISSILE (LBASM)	LONG RANGE MANEUVERABLE FIRES	GMLRS LITE
AVIATION MISSILES	MODULAR MISSILE TECHNOLOGIES OPEN SYSTEMS ARCHITECTURE ROCKET PROPELLED AND DROP/GLIDE	MULTI-ROLE SMALL GUIDED MISSILE (MRSGM)	NEXT GENERATION AIR-TO-GROUND MISSILE		

* Transition

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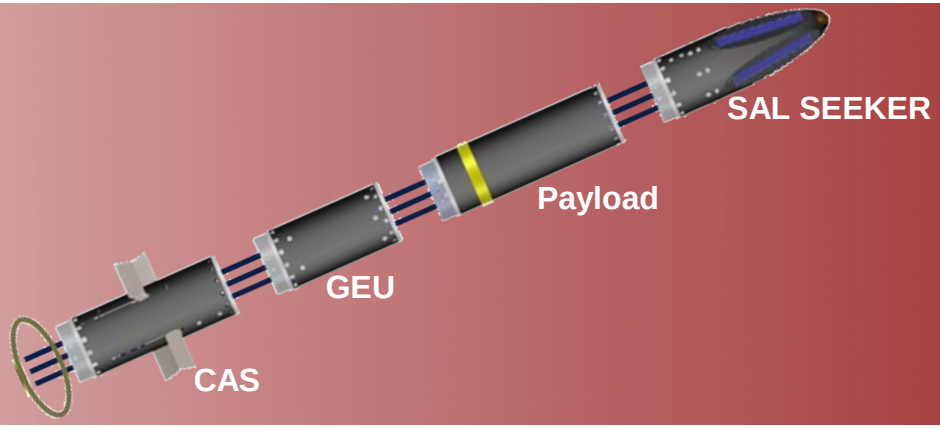
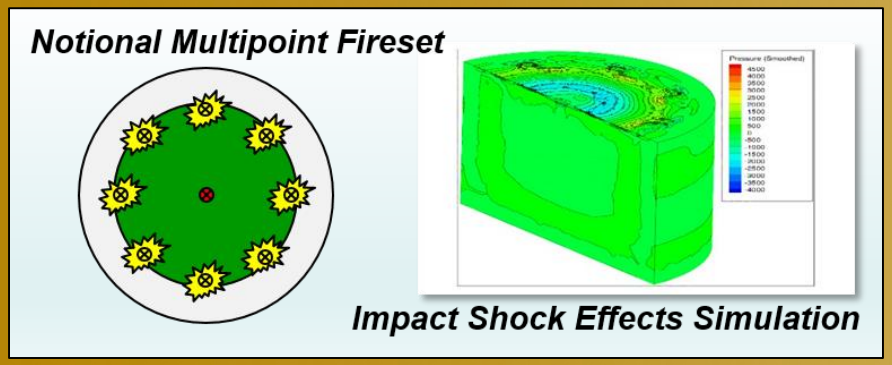
AMRDEC
Fuze Conference Briefings

"ESAD Design for Modular Missile Technology"



Wayne Eads
Session IVA, Open Session
Thursday, 8:00 AM

"Hardened Selectable Multipoint Fuze"



Michael Connolly
Session IVB, Closed Session
Thursday, 9:00 AM

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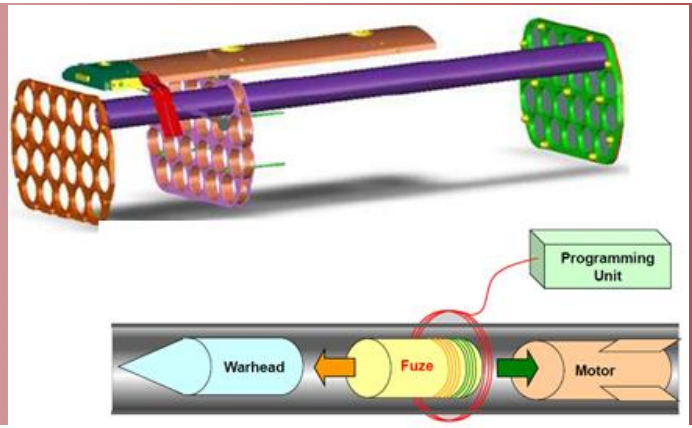
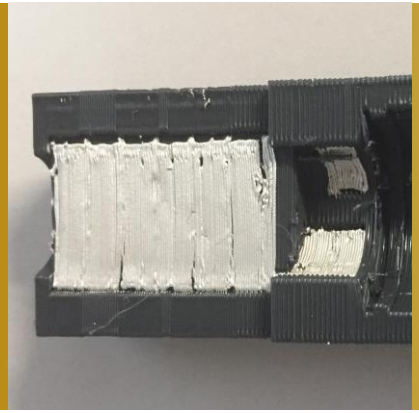
Fuze Conference Briefings

"Fuze Setting Technologies for Rockets & Missiles"



Gene Henderson
Session VB, Closed Session
Thursday, 2:00 PM

"Integration of Fire Set Structures Using Additive Manufacturing"



Daniel Pitts
Session VA, Open Session
Thursday, 2:20 PM

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